

Claims

- [c1] 1. An assembly for producing reinforced thermoplastic materials comprising:
an injection molding die;
a fiber feed tube residing in the injection molding die;
and
means for injecting a pressurized flow of molten polymer material into said injection molding die.
- [c2] 2. The assembly of Claim 1 wherein said injection molding die has an input end and an output end, said pressurized flow of molten polymer flowing in a first direction from said input end of said injection molding die to said output end of said injection molding die; said fiber feed tube being aligned parallel to said first direction and disposed to deposit a continuous strand of fiber reinforcing into said flow of molten polymer.
- [c3] 3. The assembly of Claim 2 wherein said injection molding die further comprises:
a cooling section adjacent to said output end wherein said molten polymer flow is extruded and cools and becomes more viscous thereby exerting a linear force in said first direction on said fiber reinforcing strand.

- [c4] 4. The assembly of Claim 2 wherein said continuous strand of fiber reinforcing is carbon fiber.
- [c5] 5. An assembly for producing reinforced thermoplastic materials comprising:
an injection molding die having an outer wall, an input end, an output end, a material flow channel between said input end and said output ends having a cross sectional area, a fiber feed section in said material flow channel adjacent to said input end and a cooling section in said material flow channel adjacent to said output end;
a fiber feed tube having a first end located outside said outer wall of said injection molding die and a second end located in the center of said material flow channel in said fiber feed section; and
a means for injecting a pressurized flow of molten polymer material into said input end of said injection molding die.
- [c6] 6. The assembly of Claim 5 wherein said pressurized flow of molten polymer flows in a linear fashion from said input end of said material flow channel to said output of said material flow channel.
- [c7] 7. The assembly of Claim 6 wherein said fiber feed tube is aligned in the same direction as said linear flow of

molten polymer.

- [c8] 8. The assembly of Claim 5 wherein said material flow channel is tapered and said cross sectional area decreases in size from said input end to said output end.
- [c9] 9. The assembly of Claim 5 wherein said means for injecting a pressurized flow of molten polymer is an injection molding barrel and plunger assembly.